REMARKS

Claims 1-4 are now active in this application. No new matter has been added.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I. Claims 1 and 4 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (USPN 6,043,287) in view of Baier (USPN 2,191,553)

The rejections are respectfully traversed.

The Examiner contends that Nakamura discloses the invention recited in independent claim 1 except for "a pressure reducing valve, attached near an outlet of the gas cylinder, for decompressing the gas discharge from the outlet to a predetermined pressure, and a gas hose directly connected to the reducing valve and the spray gun."

The Examiner maintains that Baier discloses a sterilizing and disinfecting apparatus that uses carbon dioxide gas as a carrier gas. However, Baier actually discloses an apparatus which comprises a cylinder 10 filled with a compressed carbon dioxide gas and a pressure reducing valve 11, attached to an outlet of the cylinder 10, for decompressing the gas discharged to a predetermined pressure. The carbon dioxide gas passed from the cylinder 10 through the pressure reducing valve 11 is passed into a vessel 22 through a coil (coiled tube) 12. Such carbon dioxide gas is passed into trimethyl borate charged in the vessel 22 through a perforated tube 17 thereby vaporizing the trimethyl borate.

Furthermore, the apparatus disclosed in Baier comprises a vapor line 23 having a jet 25 at a tip thereof. The gas within the vapor line 23 is ejected from the jet 25. However, the vapor line 23 is connected to an upper portion of the vessel 22. Thus, the gas ejected from the jet 25 ***is a mixture of*** the vaporized trimethyl borate and carbon dioxide gas. Moreover, an air duct 26 is

provided around the jet 25. Hence, the gas is ejected from the jet 25 by means of the air from the air duct 26. Clearly, the apparatus of Baier is not intended to spray a carbon dioxide gas alone (the carrier gas) from an end nozzle of a spray gun, as in the present application.

A purpose of the present invention is to prevent the carbon dioxide gas, used as a carrier gas, from being frozen, which may occur due to the high flow rate required for spraying from the nozzle. Thus, independent claim 1 requires, *inter alia*, that the spray gun, the end nozzle and the gas hose are set to have dimensions that ***permit a feed rate of the gas that does not cause the carbon dioxide gas to freeze*** due to decompressing in the pressure reducing valve ***during continuous spray for at least 15 minutes***.

There is no recognition in either Nakamura or Baier of a problem of carbon dioxide gas, used as a carrier gas, freezing due to a high flow rate required for spraying from the nozzle. In fact, the flow rate of the carbon dioxide gas in the apparatus of Baier is far less than the apparatus recited in independent claim l. This, together with the fact that the apparatus of Baier is not intended to spray carbon dioxide alone as the gas sprayed from jet 25 may explain why there is no recognition in Baier of a problem of carbon dioxide gas, jetted from the end nozzle of a spray gun, freezing due to a high flow rate required for spraying from the nozzle.

The failure of Burke et al. to address or offer a solution to a problem addressed and solved by the claimed invention further underscores the nonobviousness of the claimed invention as a whole. **North American Vaccine, Inc. v. American Cyanamid Co.**, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); **In re Newell, supra.**; **In re Nomiya**, 509 F.2d 566, 184 USPQ 607 (CCPA 1975).

Given the fact that there is no recognition in either Nakamura or Baier of a problem of carbon dioxide gas freezing due to decompressing in the pressure reducing valve during continuous spraying, there is no realistic motive for a person of ordinary skill in the art to set the spray gun, the end nozzle and the gas hose to any special dimensions, let alone that the dimensions should be dimensions that ***permit a feed rate of the gas that does not cause the carbon dioxide gas to freeze*** due to decompressing in the pressure reducing valve ***during continuous spray for at least 15 minutes***. This is what is disclosed in the present application, not the prior art.

Thus, the only apparent motivation of record for the Examiners suggestion ***to determine optimum dimensions of the spray gun, nozzle and gas hose*** of the apparatus of Nakamura, as modified by the teaching by Baier, to arrive at the claimed inventions is found in Applicant's disclosure which, of course, may not properly be relied upon to support the ultimate legal conclusion of obviousness under 35 U.S.C. §103. ***Panduit Corp. v. Dennison Mfg. Co.***, 810 F.2d 1561, 227 1 USPQ2d 1593 (Fed. Cir. 1987).

It is, therefore, respectfully submitted that the Examiner has not established the requisite motivation for the proposed modification of references to arrive at the claimed invention. Accordingly, independent claim 1, and claim 4 depending from claim 1, are patentable over Nakamura and Baier, and their allowance is respectfully solicited.

II. Claims 2 and 3 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura in view of Baier, as applied to claim 1, and further in view of Organo (JP 06-024760)

The rejections are respectfully traversed.

As claim 1 is patentable over Nakamura and Baier, claims 2 and 3 depending directly or indirectly from claim 1, are patentable over Nakamura and Baier also, even when considered further in view of Organo. Therefore, the allowance of claims 2 and 3 is respectfully solicited also.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Edward J. Wise (Reg. No. 34,523) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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